

ABSTRACT

A process of oxidizing a substrate is disclosed. The process comprising the step of treating the substrate with an oxidizing enzyme, a mediator that enhances the oxidative activity
5 of the enzyme, and a chain transfer agent. In one example, the substrate is a lignin-containing material and the process results in bleaching of the lignin-containing material. Examples of some useful enzymes are laccase, catechol oxidase, monophenol monooxygenase, and bilirubin oxidase. A composition comprising an oxidative enzyme, a mediator that enhances the oxidative activity of the enzyme, and a chain transfer agent is also disclosed.

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